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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,052	08/26/2003	Ruxandra Baurceanu	ANL 273	2952
43006	7590	01/18/2006	EXAMINER	
JAMES J. HILL EMRICH & DITHMAR, LLC 125 SOUTH WACKER DRIVE, SUITE 2080 CHICAGO, IL 60606-4401			COOKE, COLLEEN P	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/648,052

Applicant(s)

BAURCEANU ET AL.

Examiner

Colleen P. Cooke

Art Unit

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 18 November 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

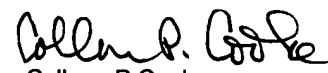
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

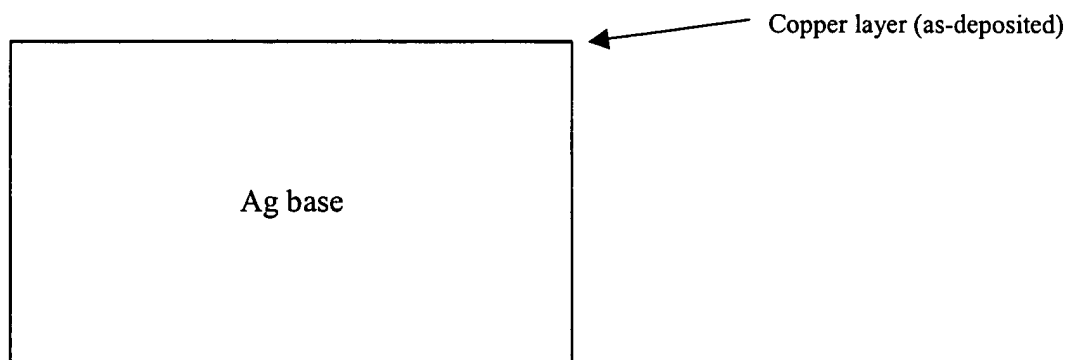

Colleen P Cooke
Primary Examiner
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Response to Request for Reconsideration

The applicant argues that the calculation of atom percent copper as presented in the previous office action (the Final Rejection) is incorrect and has submitted a declaration in support of this argument. The declaration filed 11/18/05 is insufficient to overcome the rejection of claims 1-4, 6-8, 10-12, and 14-20 based upon Onabe et al. (2003/0134749) as set forth in the last Office action.

The declaration alleges in paragraph 4 that the examiner “forgot that a copper diffusion layer has a layer thickness of 200 nanometers” and therefore the calculation, in not taking that into account, is wrong; that the calculation instead should result in about 61 atom % copper. It is respectfully submitted that this is not true, that relying upon the thickness **for the calculation** is neither required nor proper, and that the art still meets the claim limitations.

First, it may be helpful to look at the teachings simplistically. It is easy to see that 100-200 micrograms of copper per square centimeter over a 5 square centimeter area, per the specific teachings of Embodiment 1, results in a rather low amount of copper and not the rather high value of 61 atom percent as suggested by the applicant. Even further simplified, the broader teachings of Onabe et al. relate that a copper is deposited to 200 nm thickness on a 3,000,000 nm (3mm) thick silver base:



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Thus the relative thickness of the copper to silver (200:3000000) intuitively indicates that a high percentage of copper such as the 61 atom % as suggested by the applicant is simply not reasonable. The relative thicknesses just go to show on an intuitive level that the percentage of copper in the silver is going to be a very small amount, which not only supports the calculation made by the examiner, but more to the point supports the fact that the preponderance of evidence supports the rejection and that the teachings of Onabe et al. as a whole meet the claim limitations.

Next, with respect to the specific calculation in question, the applicant is reminded that this calculation was not the totality of the rejection but merely was performed in support of the rejection, to support that the teachings of Onabe et al. as a whole meet the claim limitations. The teachings of Onabe et al. relied upon for the calculation performed (see Embodiment 1 in Columns 29-30 and lines 1-8 of Column 30 particularly) specifically teach:

a Cu diffusion layer having a layer thickness of 200 nm was continuously formed on the surface layer of the base material, and deposited until movement of the base material for the prescribed length was completed. Furthermore, analysis of **the Cu content of the surface layer of the base material** on which this diffusion layer was formed yielded a Cu content of **100-200 μg per cm^2** , which satisfied the requirement of the present invention. [emphasis added]

and have already taken thickness into account, as evidenced by the fact that the data is reported as per the layer in units of weight per **area**, i.e. since the data is in reference to an area, the thickness is not relevant to that particular data. Thus though there are teachings of thickness in Onabe et al., the calculation relied upon specific data which did not require any thickness to also be used.

Thus the suggestion by the applicant that the value of 100-200 $\mu\text{g}/\text{cm}^2$ needs to be multiplied by a thickness simply is NOT true. The amount referred to is specifically taught by

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Onabe et al. to be the amount of copper in the surface **layer** and thus is given in units of micrograms per **square** centimeter (not cubic centimeter) because it refers to the amount in a two-dimensional layer, i.e. on the surface irrelevant of thickness. The calculation performed does not require using the thickness of 200 nm as suggested by the applicant because the data as reported by Onabe et al. is given for a surface and therefore that thickness becomes irrelevant for the purposes of that data. Thus the examiner calculated that an Ag base with a total surface area of 5 square centimeters having 100-200 micrograms per square centimeter yields an atom percent of Cu meeting the claimed range.

Furthermore, the mere substitution by the applicant of a value multiplied by the layer thickness into the calculations made by the examiner is irrelevant and not valid. There is no reason to do so, as explained above, and should one do so the units would not work out properly. The examiner carefully recorded her calculations to show that the units work out exactly right without the thickness as explained. For the applicant to go through the calculations performed by the examiner for a **surface** and insert multiplying by a thickness yields nonsensical results (i.e. the 61 atom percent value) which do not account for the units involved and which units would not properly come out to atom percents.

The applicant further argues in the instant application “the copper is distributed homogeneously throughout the entire substrate” but that the examiner has concentrated on the copper content of the surface. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., copper homogeneously distributed throughout a substrate) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

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specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26

USPQ2d 1057 (Fed. Cir. 1993). Further it is noted that it is not so much that the Examiner has chosen to focus on the copper content of a surface but rather that the examiner is relying upon that information provided in the reference for that specific embodiment to demonstrate that the broader teachings of the reference, which teach a diffusion layer of Ag and $50\text{-}300\mu\text{g}/\text{cm}^2$ of Cu (see for example Column 14, lines 8-11) meet the limitation of “a Ag-containing layer having between about 0.1 and 0.3 atom percent Cu” as claimed.

It is further noted that the applicant suggests that the presence of copper on the surface according to the teachings of Onabe et al. will cause diffusion of copper **from** the substrate **into** the superconductor causing damage. This is in fact the direct opposite of what Onabe et al. teaches. Onabe et al. in fact teaches that the entire purpose of including some small amount of Cu in the Ag base material is to prevent diffusion of Cu **out of the superconductor** and **into** the base material, the result of such diffusion of Cu out of the superconductor resulting in deterioration of the properties of the superconductor (Column 3, lines 35-57). It is additionally noted that this is exactly the same as the applicant’s intention, which is also to introduce a small amount of copper into the base material to prevent diffusion of copper out of the superconductor (see specification page 2, lines 1-13).